

Phase I Climate Vulnerability Assessment for Maryland Agriculture

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Agriculture, Forestry and Local Government Climate Change Response Strategies

Prepared by:



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About the Hughes Center

Founded in 1999, the Hughes Center is a nonprofit affiliated with the UMD College of Agriculture and Natural Resources (UMD AGNR)

Mission: To provide leadership to promote environmentally sound and economically viable agriculture and forestry as Maryland's preferred land use through research, outreach and collaboration.

Research

- Funded more than 70 research projects totaling more than \$10 million
- Provides unbiased, science-based guidance

Education and outreach

- Example: Watershed Implementation Plan (MD and Conowingo) outreach to ag and local government sectors

Collaboration

- The Center works with others to maximize resources
- We are not the experts, but facilitators



Ecosystem Services



Feed



Fiber



Core Functions of Agriculture

Clean Energy



Food





TRANSFORMING OUR
WORLD:
THE 2030 AGENDA FOR
SUSTAINABLE
DEVELOPMENT

1 NO
POVERTY



2 ZERO
HUNGER



3 GOOD HEALTH
AND WELL-BEING



4 QUALITY
EDUCATION



5 GENDER
EQUALITY



6 CLEAN WATER
AND SANITATION



7 AFFORDABLE AND
CLEAN ENERGY



8 DECENT WORK AND
ECONOMIC GROWTH



9 INDUSTRY, INNOVATION
AND INFRASTRUCTURE



10 REDUCED
INEQUALITIES



11 SUSTAINABLE CITIES
AND COMMUNITIES



12 RESPONSIBLE
CONSUMPTION
AND PRODUCTION



13 CLIMATE
ACTION



14 LIFE
BELOW WATER



15 LIFE
ON LAND



16 PEACE, JUSTICE
AND STRONG
INSTITUTIONS



17 PARTNERSHIPS
FOR THE GOALS



Climate Impacts



Crops



Livestock



Pollinators



Pests



Invasives



Disease



Infrastructure



Water



Soil



Biodiversity



Insurance



Forecasting



CLIMATE CHANGE

“Business as usual will not be enough”

Phase I Vulnerability Assessment

Concerns:

- Climate changing at an accelerating rate
- Maryland and agriculture particularly vulnerable to climate change

Request:

- 2021 General Assembly Joint Chairmen's Report budget narrative
- Study in preparation for a Maryland agriculture climate vulnerability assessment (Phase II)
 - Hughes Center, MDA and MDE
 - What we know (data, experts, expected threats)
 - Who is impacted
 - What are the resources needed for a full study?
- Worked with Project Leadership Team:
 - UMD AGNR and Extension
 - DNR

Phase I Vulnerability Assessment

Scientific consensus predicts climate change impacts are expected to:

- Continue and intensify
- Impact both in-land and coastal agriculture and many, if not all, agricultural sectors
- Be compounded by sea-level rise
- Necessitate enhanced management of farm operations

What farmers are telling us:

- Farmers are already experiencing impacts to their operations
- The varying impacts underscore need for stakeholder involvement as decision-makers seek solutions

What we need to better understand:

- Fine-resolution climate data
- Economic impact estimates
- Climate adaptation and mitigation strategies
- Research gaps

Phase II Vulnerability Assessment



Phase II Process:

- Led by UMD AGNR, Hughes Center, state agencies
- Work with Maryland Commission on Climate Change (MCCC) to ensure timely response

Includes:

- Review and analyze recent research/identify future research
- Robust stakeholder engagement
- Identified response strategies to improve resilience, mitigate impacts and reduce greenhouse gas emission

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